

West Virginia Department of Health and Human Resources

Information for Physicians on Rocky Mountain Spotted Fever

Does Rocky Mountain Spotted Fever (RMSF) occur in West Virginia?

From 1996 through 2000, 13 cases of RMSF were reported in our state, including one fatality. However, the disease is often not reported or diagnosed. During this time period, cases were reported from Berkeley, Cabell, Hampshire, Hardy, Jefferson, Mercer, Roane, and Wirt counties.

What are the signs and symptoms of RMSF?

Signs of the disease usually begin two to 12 days after a tick bite. Initially, patients have fever and headache followed by rash, myalgias, nausea, vomiting, or abdominal pain. Severe infection may compromise respiratory, CNS, cardiac and renal system function.

The rash characteristically begins on the wrists and ankles, then spreads to the palms and soles, followed by proximal extremities and trunk. Initially, the rash is macular, and blanches with pressure. Over time, the rash evolves into petechiae and purpura. Gangrenous areas may develop on the fingers, toes, nose, ears, scrotum or vulva.

Risk factors for fatal RMSF include age >40, nonwhite race, male gender, absence of headache, lack of history of tick attachment, delay in treatment, gastrointestinal symptoms, and no treatment by the fifth day of illness.

What's the best way to make the diagnosis?

Diagnosis is difficult, and is based on clinical suspicion. *Systemic illness during tick season is the most important clue.* The triad of headache, fever and rash occurs in only 3% of patients at presentation. Most patients with RMSF develop a skin rash after about 3-5 days of illness, but 10-15% never develop a skin rash. Finally, only 50-70% of patients recall a tick bite.

Laboratory findings may include normal peripheral WBC count, thrombocytopenia, elevated aminotransferase levels, hyponatremia, anemia, increased bilirubin, increased creatinine kinase level, elevated CSF WBC with a monocytic predominance, and negative serologic tests until convalescence.

A fourfold increase in titer by any of several serologic methods is diagnostic. Of course, serologic diagnosis is retrospective, and therapy should not be delayed pending results.

More rapid diagnostic tests are available in some centers. Tissue culture can be used to culture *Rickettsia rickettsii*. Immunofluorescent or peroxidase staining of skin biopsy can yield a diagnosis within 24 hours. PCR results can be available the same day.

How can I help my patients prevent infection with tick-related disease?

Persons in tick-infested areas should wear long sleeved shirts and pants that fit tightly around the wrists and ankles, use a tick repellent, and inspect themselves and their children at least twice daily for ticks. Risk of disease transmission increases with the length of tick attachment.

If a tick is identified, it should be removed immediately with tweezers. The tick should be grasped as close to the skin as possible, and pulled away gently. If tweezers are not available, the hands should be covered with tissue while attempting to remove the tick. Hot objects such as cigarettes and matches should not be used, nor should vaseline or similar methods be employed. After handling ticks, hands should be washed with soap and water.

Finally, patients can be warned about the symptoms of tick-related disease.

What is the best treatment for RMSF?

In adults and children eight years of age and older: doxycycline 100 mg every 12 hours or tetracycline 25-50 mg/kg/day in four divided doses. Chloramphenicol given at 50 mg/kg/day in four divided doses is also an effective agent. In children, chloramphenicol is preferred by some experts. The American Academy of Pediatrics lists doxycycline as an option for children under age eight because staining of the teeth is dose-related, is less than with tetracycline, and tetracycline is active against both RMSF and erlichiosis whereas chloramphenicol is not. Therapy is continued until the patient has been afebrile for 2-3 days, usually for 7-10 days total.

Should I report RMSF to my local health department?

Yes. Reporting helps us all understand how this disease behaves in our state. From reporting, we can learn when to watch for cases of RMSF and where the disease occurs.

